

## 4.8 Socioeconomic Activity

Activity on the Hanford Site plays a dominant role in the socioeconomic activity of the Tri-Cities and other parts of Benton and Franklin counties. The agricultural community also has a significant effect on the local economy. Any major changes in the Hanford mission could potentially affect the Tri-Cities and other areas of Benton and Franklin counties.

### 4.8.1 Local Economy

Three major sectors have been the principal driving forces of the economy in the Tri-Cities since the early 1970s: 1) DOE and its contractors operating the Hanford Site; 2) Energy Northwest (formerly the Washington Public Power Supply System) in its construction and operation of nuclear power plants; and 3) the agricultural community, including a substantial food-processing component. With the exception of a minor amount of agricultural commodities sold to local-area consumers, the goods and services produced by these sectors are exported outside the Tri-Cities. In addition to the direct employment and payrolls, these major sectors also support a sizable number of jobs in the local economy through their procurement of equipment, supplies, and business services.

In addition to these three major employment sectors, three other components can be readily identified as contributors to the economic base of the Tri-Cities: payrolls from the five major non-Hanford employers in the region, tourism, and pension benefits from former employees.

#### 4.8.1.1 Employment and Income

**DOE Hanford Site Employment.** During FY 2001, the DOE Office of River Protection (ORP) and its prime contractors CH2M Hill Hanford Group, Inc. and Bechtel National, Inc.; DOE-RL and its prime contractors Fluor Hanford, Inc. (and its principal subcontractors); PNNL; Bechtel Hanford, Inc.; and the Hanford Environmental Health Foundation employed an average of 10,700 employees. Fiscal year 2001 year-end employment at Hanford was 10,670, down slightly from 10,870 in FY 2000. In FY 1999, average employment was 10,290, compared to an average employment of 11,940 in 1996. The drop between FY 1996 and FY 1999 reflects employment declines and reorganization of the DOE contractors under the Project Hanford Management Contract (PHMC), which was created in 1996. Under the PHMC, almost 2200 employees of the former management and operations contractor were moved into six “enterprise companies” and were no longer counted as official Hanford employees. The number of employees at Hanford is down considerably from a peak of 19,200 in FY 1994, but still represents 12 percent of the 89,100 total jobs in the economy.

Based on employee residence records as of April 2002, 92 percent of the direct employees of Hanford live in Benton and Franklin counties. Approximately 73 percent of Hanford employees reside in Richland, Pasco, or Kennewick. More than 36 percent are Richland residents, 9 percent are Pasco residents, and 28 percent live in Kennewick. Residents of other areas of Benton and Franklin counties, including West Richland, Benton City, and Prosser, account for about 18 percent of total Hanford Site employment (Neitzel 2002a).

1       **Energy Northwest.** Although activity related to commercial nuclear power plant construction ceased  
2 with the completion of the WNP-2 reactor in 1983 (now named Columbia Generating Station), Energy  
3 Northwest continues to be a major employer in the Tri-Cities area. Headquarters personnel based in  
4 Richland oversee the operation of the Columbia Generating Station. Decommissioning of mothballed  
5 nuclear power plants (WNP-1 and WNP-4), which never were completed, began in 1995. In FY 1999,  
6 Energy Northwest employed around 29 people at the two plants (one-third of the 90 people who were  
7 employed in 1994 as a result of decommissioning activities). As part of an effort to reduce electricity  
8 production costs, Energy Northwest headquarters decreased the size of its workforce from over 1900 in  
9 1994 to 1016 at the end of 1999. As part of a refueling and maintenance project, as of April 2002  
10 employment was 1208 personnel.

11  
12       **Agriculture.** In 2000, agricultural production and services in the bi-county area generated about  
13 10,260 wage and salary jobs, or about 12 percent of the area's total employment, as represented by the  
14 employees covered by unemployment insurance (LMEA 2001a). Seasonal farm workers are not included  
15 in that total but are estimated by the U.S. Department of Labor (DOL) for the agricultural areas in the  
16 state of Washington. In 2001, there was an average of 5148 seasonal farm workers per month in Benton,  
17 Franklin, and Walla Walla counties, ranging from 1153 workers during the winter pruning season to  
18 11,329 workers at the peak of harvest. An estimated average of 4391 seasonal workers were classified as  
19 local (ranging from 1131 to 10,054); an average of 15 were classified as intrastate (ranging from 0 to  
20 146), and an average of 748 were classified as interstate (ranging from 0 to 1612). The weighted seasonal  
21 wage for 2001 ranged from \$6.20/hr to \$7.58/hr, with an average wage of \$6.88/hr (DOL 2001).

22  
23       According to the U.S. Department of Commerce's Regional Economic Information System (REIS),  
24 about 2640 people were classified as farm proprietors in 2000. Farm proprietors' income, according to  
25 this same source, was estimated to be \$53.2 million (DOC 2001).

26  
27       The area farms and ranches generate a sizable number of jobs in supporting activities, such as  
28 agricultural services (for example, application of pesticides and fertilizers and irrigation system  
29 development) and wholesale trade (farm supply and equipment sales, and fruit packing). Although  
30 formally classified as a manufacturing activity, food processing is a natural extension of the farm sector.  
31 More than 20 food processors in Benton and Franklin counties produce such items as potato products,  
32 canned fruits and vegetables, wine, and animal feed.

33  
34       **Other Major Employers.** In 2001, the five largest non-Hanford Site and non-government employers  
35 employed approximately 5035 people in Benton and Franklin counties. These companies include  
36 (1) Lamb Weston, which employed 1800; (2) Iowa Beef Processing Inc., which employed 1450;  
37 (3) Framatome ANP, Richland Inc. (formerly Siemens Power Corporation), which employed 750;  
38 (4) Boise Cascade Corporation Paper and Corrugated Container Divisions, which employed 685, and  
39 (5) Burlington Northern Santa Fe Railroad, which employed 350. Boise Cascade and Iowa Beef are  
40 located in western Walla Walla County, but most of their workforce resides in Benton and Franklin  
41 counties. Four of the largest agriculture growers and processors in the area: Broetje Orchards,  
42 J.R. Simplot Company, Twin City Foods, Inc., and AgriNorthwest, employed approximately 2000 people  
43 in 2001; however, a large portion of the workers were seasonal (TRIDEC 2002).

1       **Employment and Income Figures.** In 2001, nonagricultural employment rose 4 percent. There was  
2 an average of 78,500 nonagricultural jobs in the Tri-Cities in 2001, up approximately 3000 from year  
3 2000. Gains in employment ranged from 100 workers in the manufacturing sector to ,700 in services, as  
4 every sector added workers except finance, insurance, and real estate, which stayed the same (LMEA  
5 2001b).  
6

7       In 2000, the total personal income for Benton County was \$3.7 billion and for Franklin County was  
8 \$932 million, compared to the Washington State total of \$184.5 billion. Per capita income in 2000 was  
9 \$25,624 for Benton County, \$18,813 for Franklin County, and \$31,230 for Washington State (DOC  
10 2001). The preliminary estimate of median household income in 2001 for Benton County is \$48,893;  
11 Franklin County is estimated at \$40,976, and for Washington is estimated at \$48,835 (OFM 2001a).  
12

#### 13       **4.8.1.2 Tourism**

14

15       A significant rise in the number of visitors to the Tri-Cities over the last several years has resulted in  
16 tourism playing an increasing role in helping to diversify and stabilize the area economy. The Tri-Cities  
17 Visitors and Convention Bureau reported that 97,770 people attended conventions and sporting events,  
18 spending an estimated \$32.3 million in the Mid-Columbia in 2001. The number of people attending  
19 convention and group events has more than doubled since 1995 and more than tripled since 1991.  
20

21       The importance of tourism is evidenced by the amount of money spent on local goods and services.  
22 Overall tourism expenditures in the Tri-Cities were roughly \$220 million in 2000, up from \$204.7 million  
23 in 1999. Travel-generated employment in Benton and Franklin counties was about 4120 with an  
24 estimated \$56.4 million in payroll, up from an estimated 4090 employed and a \$44.7 million payroll in  
25 1999. In addition, tourism generated \$3.4 million in local taxes and \$15.1 million in state taxes in 2000  
26 (OTED 2002).  
27

#### 28       **4.8.1.3 Retirees**

29

30       Although Benton and Franklin counties have a relatively young population (approximately 53 percent  
31 under the age of 35), 19,523 people over the age of 65 resided in Benton and Franklin counties in 2002.  
32 The portion of the total population 65 years and older in Benton and Franklin counties accounts for  
33 9.8 percent of the total population, which is below the 11.2 percent for the state of Washington (OFM  
34 2003). This segment of the population supports the local economy on the basis of income received from  
35 government transfer payments and pensions, private pension benefits, and prior individual savings.  
36

#### 37       **4.8.2 Environmental Justice**

38

39       Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations  
40 and Low-income Populations" (59 FR 7629), directs federal agencies in the Executive Branch to consider  
41 environmental justice so that their programs will not have "...disproportionately high and adverse human  
42 health or environmental effects..." on minority and low-income populations. Executive Order 12898  
43 further directed federal agencies to consider effects to "populations with differential patterns of subsis-  
44 tence consumption of fish and wildlife." The Executive Branch agencies also were directed to develop

1 plans for complying with the order. The Council on Environmental Quality (CEQ) provided additional  
2 guidance later for integrating environmental justice into the NEPA process in a December 1997  
3 document, *Environmental Justice Guidance under the NEPA* (CEQ 1997).  
4

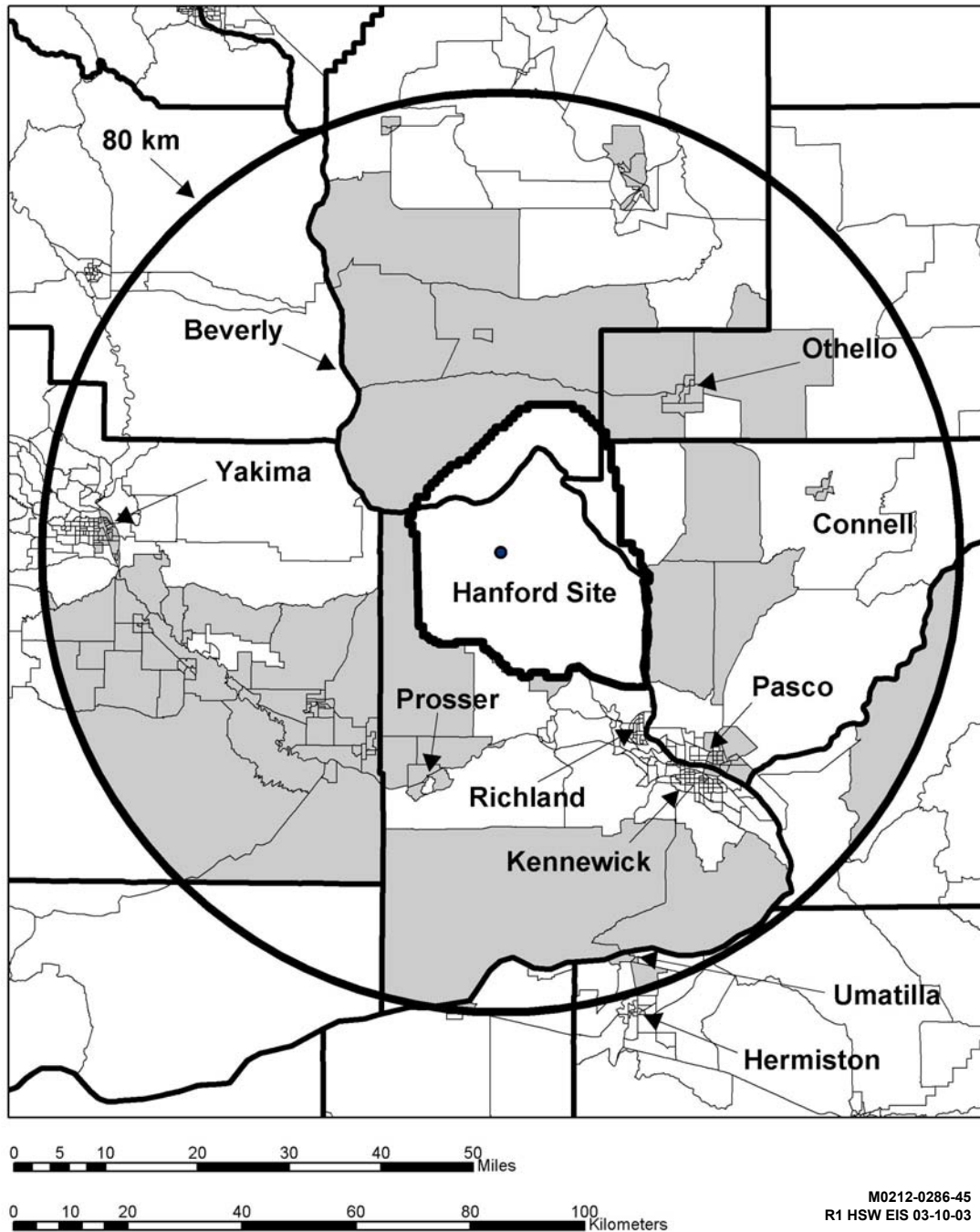
5 Minority populations are defined as all nonwhite individuals, plus all individuals of Hispanic origin,  
6 as reported in the 2000 Census (Census 2001a). Low-income persons are defined as living in households  
7 that report an annual income less than the United States official poverty level, as reported by the Census  
8 Bureau. The poverty level varies by size and relationship of the members of the household. The year  
9 2000 poverty level was \$17,761 for a family of four (Census 2001a). Nationally, in 1999, 29.9 percent of  
10 all persons were minorities, and 11.8 percent of all persons lived in households that had incomes less than  
11 the poverty level (which was \$17,029 for a family of four in that year) (Census 2000a, b). The year 2000  
12 Census state and county area poverty estimates report that Washington had 11.6 percent of its population  
13 living in poverty in 1997, while Benton County and Franklin County had 10.3 percent and 19.2 percent,  
14 respectively (Census 2002).  
15

16 The year 2000 census data indicate that a total population of approximately 482,300 people resided  
17 within an 80-km (50-mi) radius of the Hanford Site. Based on the 2000 census, the 80-km (50-mi) area  
18 surrounding the Hanford Site had a total minority population of about 178,500, about 37 percent of the  
19 total. The ethnic composition of the minority population is primarily White Hispanic (24 percent), self-  
20 designated "other" and multiple races (63 percent), and American Native (6 percent). Asians and Pacific  
21 Islanders (4 percent) and African American (3 percent) make up the remainder. The Hispanic population  
22 resides predominantly in Franklin, Yakima, Grant, and Adams counties. Native Americans within the  
23 80-km (50-mi) area reside primarily on the Yakama Reservation, west of the Hanford Site, and upstream  
24 of the Site near the town of Beverly, Washington.  
25

26 Figure 4.25 shows the location of Census block groups from the 2000 Census that had either a  
27 majority of residents who were members of a minority group (racial minority or Hispanic), or whose  
28 percentage of residents belonging to any minority group was at least 20 percentage points greater than the  
29 corresponding percentage of the state population (Census 2001b, c). Table 4.16 presents population  
30 estimates and percentages by race and Hispanic origin for Benton, Franklin, Grant, Adams, and Yakima  
31 counties, and the 80-km (50-mi) radius of the Hanford Site.  
32

33 The 2000 low-income population was approximately 80,700 or 17 percent of the total population  
34 residing in the 80-km (50-mi) radius of the Hanford Site. The majority of these households were located  
35 to the southwest and north of the site (Yakima and Grant counties), and in the cities of Pasco and  
36 Kennewick.  
37

38 Table 4.17 shows the estimated numbers and percentages of people living below the poverty level in  
39 the counties touched by the 80-km (50-mi) circle in Figure 4.26 for the year 2000. The low-income  
40 population of this larger area is dispersed throughout this region with the highest concentrations occurring  
41 in Franklin, Yakima, and Kittitas counties and the largest numbers in Benton, Yakima, and Grant  
42 counties.  
43



**Figure 4.25.** Location of Asian, Black, Hispanic, Native American, Pacific Islander, and Overall Minority Populations Near the Hanford Site. (Shading denotes block groups with potential environmental justice concerns).

**Table 4.16.** Population Estimates and Percentages by Race and Hispanic Origin within Selected Counties in Washington State and the 80-km (50 mi) Radius of Hanford as Determined by the 2000 Census (Census 2003)

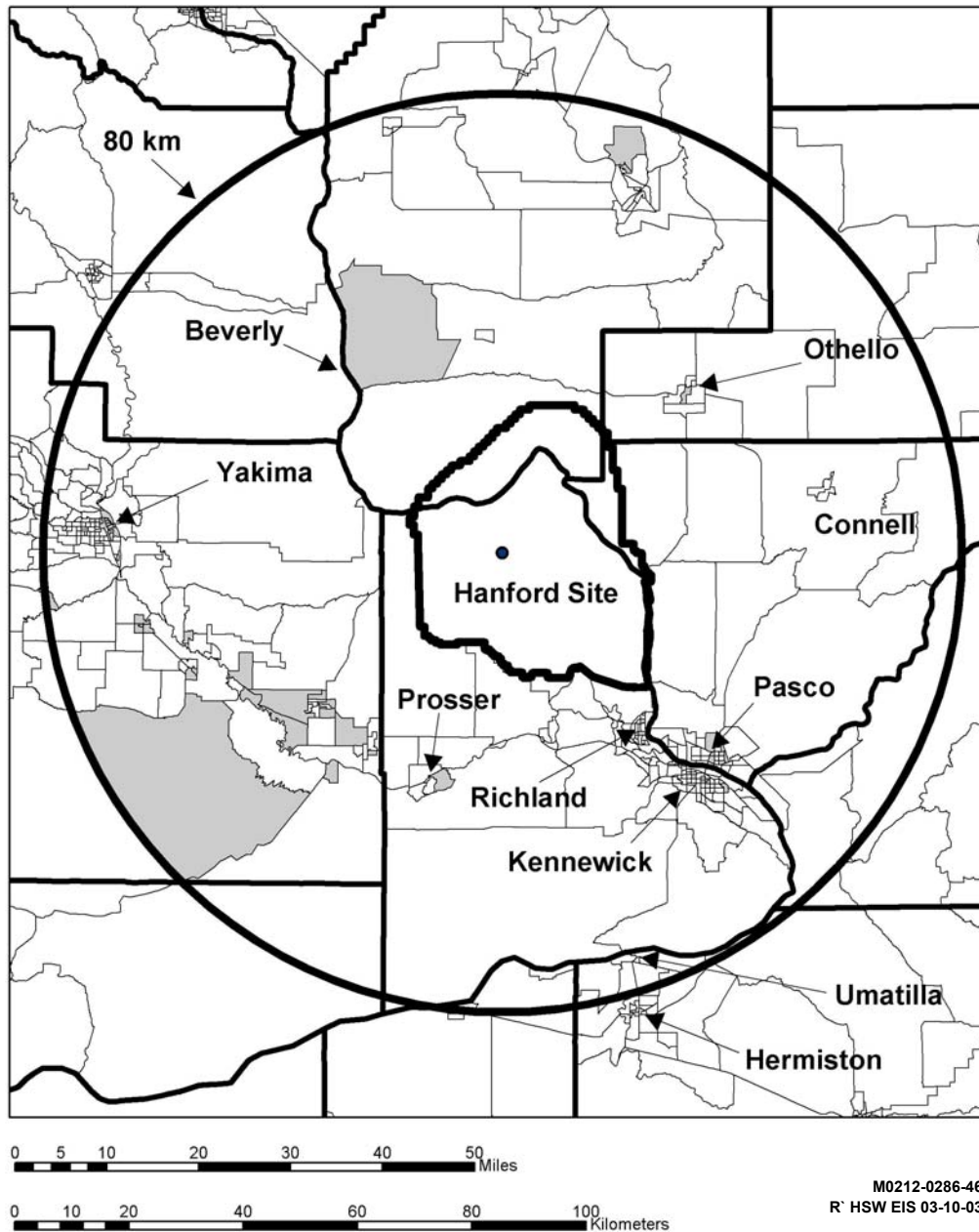
Subject	WA State	Percent	Benton/Franklin/ Grant/Adams/ Yakima	Percent	Benton County	Franklin County	Grant County	Adams County	Yakima County	80 km (50 mi) Radius of Hanford <sup>(a)</sup>
Total Population	5,894,121	100	505,529	100	142,475	49,347	74,698	16,428	222,581	482,300
Single Race	5,680,602	96.4%	489,206	96.8%	138,646	47,302	72,451	15,977	214,830	482,280
White	4,821,823	81.8%	367,283	72.7%	122,879	30,553	57,174	10,672	146,005	347,047
Black or African American	190,267	3.2%	5,494	1.1%	1319	1230	742	46	2,157	5507
American Indian/Alaska Native	93,301	1.6%	12,468	2.5%	1165	362	863	112	9966	10,288
Asian	322,335	5.5%	6809	1.3%	3134	800	652	99	2124	6681
Native Hawaiian/Pacific Islander	23,953	0.4%	482	0.1%	163	57	53	6	203	479
Other Race	228,923	3.9%	96,670	19.1%	9986	14,300	12,967	5042	54,375	112,278
Two or More Races	213,519	3.6%	16,323	3.2%	3829	2045	2247	451	7751	20
Hispanic Origin (of any race) <sup>(b)</sup>	441,509	7.5%	150,951	29.9%	17,806	23,032	22,476	7732	79,905	149,588
(a) Includes a portion of Oregon										
(b) Hispanic origin is not a racial category. It may be viewed as the ancestry, nationality group, lineage, or country of birth of the person or person's parents or ancestors before arrival in the United States. Persons of Hispanic origin may be of any race and are counted in the racial categories shown.										

**Table 4.17.** Number and Percentages of Persons Defined as Low-Income Living in Counties Near the Hanford Site, in 1999, as Determined by the 2000 Census (Census 2002).

	Number <sup>(a)</sup>		Percent Below Poverty Level
	All Income Levels	Below Poverty Level	
Washington:			
Adams County	16,217	2951	18.2
Benton County	141,232	14,517	10.3
Chelan County	65,564	8147	12.4
Columbia	4008	507	12.6
Franklin	48,307	9280	19.2
Grant County	73,591	12,809	17.4
Kittitas County	31,177	6,122	19.6
Klickitat County	18,983	3236	17.0
Walla Walla County	50,245	7567	15.1
Yakima County	218,966	43,070	19.7
Oregon:			
Morrow County	10,919	1617	14.8
Umatilla County	67,329	8524	12.7
Union County	23,795	3281	13.8
Total	770,333	121,628	15.8
(a) All individuals for whom poverty status is determined.			

The CEQ guidance recognizes that many minority and low-income populations derive part of their sustenance from subsistence hunting, fishing, and gathering activities (sometimes for species unlike those consumed by the majority population) or are dependent on water supplies or other resources that are atypical or used at different rates than other groups. These differential patterns of resource use are to be identified where practical and appropriate. There are Native Americans of various tribal affiliations that live in the greater Columbia Basin who rely on natural resources for subsistence.

There is some dependence on natural resources for dietary subsistence for the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, and the Yakama Nation (Harris and Harper 1997). The treaties of 1855 maintain the rights of these tribes to fish, hunt, erect fish-curing structures, gather food, and graze stock in their usual and accustomed places on open/unclaimed portions of the lands ceded to the government. The Wanapum, a non-treaty tribe, historically lived on what is now the Hanford Site and continue to live adjacent to the Site. They fish on the Columbia River and gather food resources near the Hanford Site. The Confederated Tribes of the Colville Reservation, established by an Executive Order in 1872, traditionally fished and gathered food resources in the Hanford area. They are also recognized as having cultural and religious ties to the Hanford Site.



**Figure 4.26.** Location of Low-Income Populations Near the Hanford Site. (Shading denotes block groups with potential environmental justice concerns).

### 4.8.3 Demography

Census 2000 report population totals for Benton and Franklin counties were 142,475 and 49,347, respectively (Census 2001b). Benton and Franklin counties grew at a faster pace in the 1990s than



1 Washington State did as a whole. The population of Benton County grew 26.6 percent up from 112,560  
2 in 1990. The population of Franklin County grew 31.7 percent, up from 37,473 in 1990 (Census 2001b).

3  
4 Within each county, census figures indicate the distribution of the Tri-Cities population by city as  
5 follows: Richland 38,708; Pasco 32,066; and Kennewick 54,693. The combined populations of Benton  
6 City, Prosser, and West Richland totaled 15,847 in 2000. The unincorporated population of Benton  
7 County was 33,227. In Franklin County, incorporated areas other than Pasco had a total population of  
8 3595. The unincorporated population of Franklin County was 13,886 (Census 2001b).

9  
10 The 2000 population figures for Benton and Franklin counties indicate that Asians represent a lower  
11 proportion, and individuals of Hispanic origin represent a higher proportion of the racial distribution than  
12 those in the state of Washington. Countywide, Benton and Franklin counties exhibit varying racial  
13 distributions.

14  
15 In 2000, Benton and Franklin counties accounted for 3.3 percent of Washington's population. The  
16 population demographics of Benton and Franklin counties are quite similar to those found within  
17 Washington. The population in Benton and Franklin counties under the age of 35 is 53.1 percent,  
18 compared to 49.4 percent for Washington State. In general, the population of Benton and Franklin  
19 counties is somewhat younger than that of Washington. The 0- to 14-year-old age group accounts for  
20 25.6 percent of the total bi-county population as compared to 21.3 percent for Washington. In 2000, the  
21 65-year-old and older age group constituted 9.8 percent of the population of Benton and Franklin  
22 counties, compared to 11.2 percent for Washington (Census 2001b).

#### 23 24 **4.8.4 Housing**

25  
26 In FY 2001, 2519 houses were sold in the Tri-Cities at an average price of \$134,570, compared to  
27 2195 houses sold at an average price of \$128,928 in 2000 (TCAR 2001). In FY 2001, 869 single-family  
28 houses were built, up 14 percent from the 760 that were built in 2000, but down from a peak of 1117 in  
29 1994 (WCRER 2001a).

30  
31 As of April 1, 2001, there were estimated to be 73,410 housing units in Benton and Franklin counties,  
32 which is 26.4 percent more than the 58,541 in 1990 (OFM 2001c). The number of apartments has  
33 increased from 8225 in 1990 to 10,238 in 2001. The vacancy rate of apartments in Benton and Franklin  
34 counties in September 2001 was 2.0 percent, and the average rent was \$576. These figures are down  
35 from the 4.3 percent vacancy rate and up from the \$530 average rent in 2000 (WCRER 2001b).

#### 36 37 **4.8.5 Local and Regional Transportation**

38  
39 The Tri-Cities serves as a regional transportation and distribution center with major air, land, and  
40 river connections. The Burlington Northern Santa Fe and Union Pacific railroad companies provide  
41 direct rail service. Union Pacific operates the largest fleet of refrigerated rail cars in the United States and  
42 is essential to food processors that ship frozen food from this area. Amtrak provides passenger rail  
43 service with a station in Pasco.

1 Docking facilities at the Ports of Benton, Kennewick, and Pasco are important aspects of the  
2 regional infrastructure. These facilities are located on the 525-km (326-mi) long commercial waterway  
3 that includes the Snake and Columbia Rivers and extends from the ports of Lewiston-Clarkston in  
4 Idaho to the deep-water ports of Portland, Oregon, and Vancouver, Washington. The average shipping  
5 time from the Tri-Cities to these deep-water ports by barge is 36 hours.  
6

7 Daily air passenger and freight services connect the area with most major cities through the Tri-Cities  
8 Airport, located in Pasco. This modern commercial airport links the Tri-Cities to major hubs and pro-  
9 vides access to destinations anywhere in the world. Delta Airlines, United Express, and Horizon Air offer  
10 33 flights into and out of the Tri-Cities daily connecting to domestic and international flights through Salt  
11 Lake City, Seattle, Denver, Spokane, and Portland. A total of 206,188 passengers, used the Tri-Cities  
12 Airport in 2001, which was down slightly from 2000 when the airport set a record of 209,434 passengers  
13 and was the sixth year in a row of passenger increases. Projections indicate the terminal can serve  
14 almost 300,000 passengers annually. The Tri-Cities region has three general aviation airports that  
15 serve private aircraft. Air freight shippers that service the region include Airborne from the Richland  
16 airport, United Parcel Service from the Kennewick airport, and Federal Express from the Tri-Cities  
17 Airport in Pasco.  
18

19 Mass transit in the area is provided by the Ben Franklin Transit system. The system covers more than  
20 286 km<sup>2</sup> (110 mi<sup>2</sup>) and provides frequent service to most local communities. The Ben Franklin transit  
21 system consists of 54 buses, 31 Dial-a-Ride para-transit vehicles, and 75 Van Pool vans. Two local taxi  
22 companies provide radio-dispatched taxicab service 24 hours a day: A-1 Tri-Cities Cab and AMR  
23 Transportation. Intercity bus transportation is available.  
24

25 The regional transportation network in the Hanford vicinity includes the areas in Benton and  
26 Franklin counties from which most of the commuter traffic associated with the Site originates.  
27 Interstate (I) highways that serve the area are I-82 and I-182. I-82 is 8 km (5 mi) south-southwest  
28 of the Hanford Site. I-182, a 24-km (15-mi) long urban connector route, located 8 km (5 mi) south-  
29 southeast of the site, provides an east-west corridor linking I-82 to the Tri-Cities area. I-90, located  
30 north of the site, is the major link to Seattle and Spokane and extends to the East Coast. I-82 serves as  
31 a primary link between Hanford and I-90, as well as I-84. I-84, located south of the Hanford Site  
32 in Oregon, is a major corridor leading to Portland, Oregon. SR 224, also south of the site, serves  
33 as a 16-km (10-mi) link between I-82 and SR 240. SR 24 enters the Site from the west, continues  
34 eastward across the northernmost portion of the site, and intersects SR 17 approximately 24 km (15 mi)  
35 east of the site boundary. SR 17 is a north-south route that links I-90 to the Tri-Cities and joins  
36 U.S. Route 395, continuing south through the Tri-Cities. U.S. Route 395 north also provides direct  
37 access to I-90. SR 240 and 24 traverse the Hanford Site and are maintained by Washington State.  
38

39 A DOE-maintained road network within the Hanford Site consists of 607 km (377 mi) of asphalt-  
40 paved road, and provides access to the various work centers (Figure 4.27). Primary access roads on the  
41 Hanford Site are Routes 1, 2, 3, 4, 6, 10, and 11A. The 200 East Area is accessed primarily by Route 4  
42 South from the east and from Route 4 North off Route 11A from the north and from Route 11A for  
43 vehicles entering the site at the Yakima Barricade. A new access road was opened in late 1994 to provide  
44 access directly to the 200 Areas from SR 240. Public access to the 200 Areas and interior locations of the

1 Hanford Site has been restricted by guarded gates at the Wye Barricade (at the intersection of Routes 10  
2 and 4), the Yakima Barricade (at the intersection of SR 240 and Route 11A), and Rattlesnake Barricade  
3 south of the 200 West Area. None of the previously listed roadways have experienced any substantial  
4 congestion except Route 4. Onsite road usage is being assessed to determine whether roads could be  
5 closed to reduce the cost of infrastructure and maintenance.  
6

7 Access to the Hanford Site is via three main routes, Hanford Route 4S from Stevens Drive or George  
8 Washington Way in the City of Richland, Route 10 from SR 240 near its intersection with SR 225, or via  
9 Route 11A from SR 240 near its intersection with SR 240. Another route, through the Rattlesnake  
10 Barricade, is located 35 km (22 mi) northwest of Stevens Drive and is for passenger vehicle access only.  
11 The estimated total number of commuters to this area is 3100. Approximately 87 percent of the workers  
12 commuting to the 200 Areas are from the Tri-Cities, West Richland, Benton City, and Prosser  
13 (Perteet et al. 2001).  
14

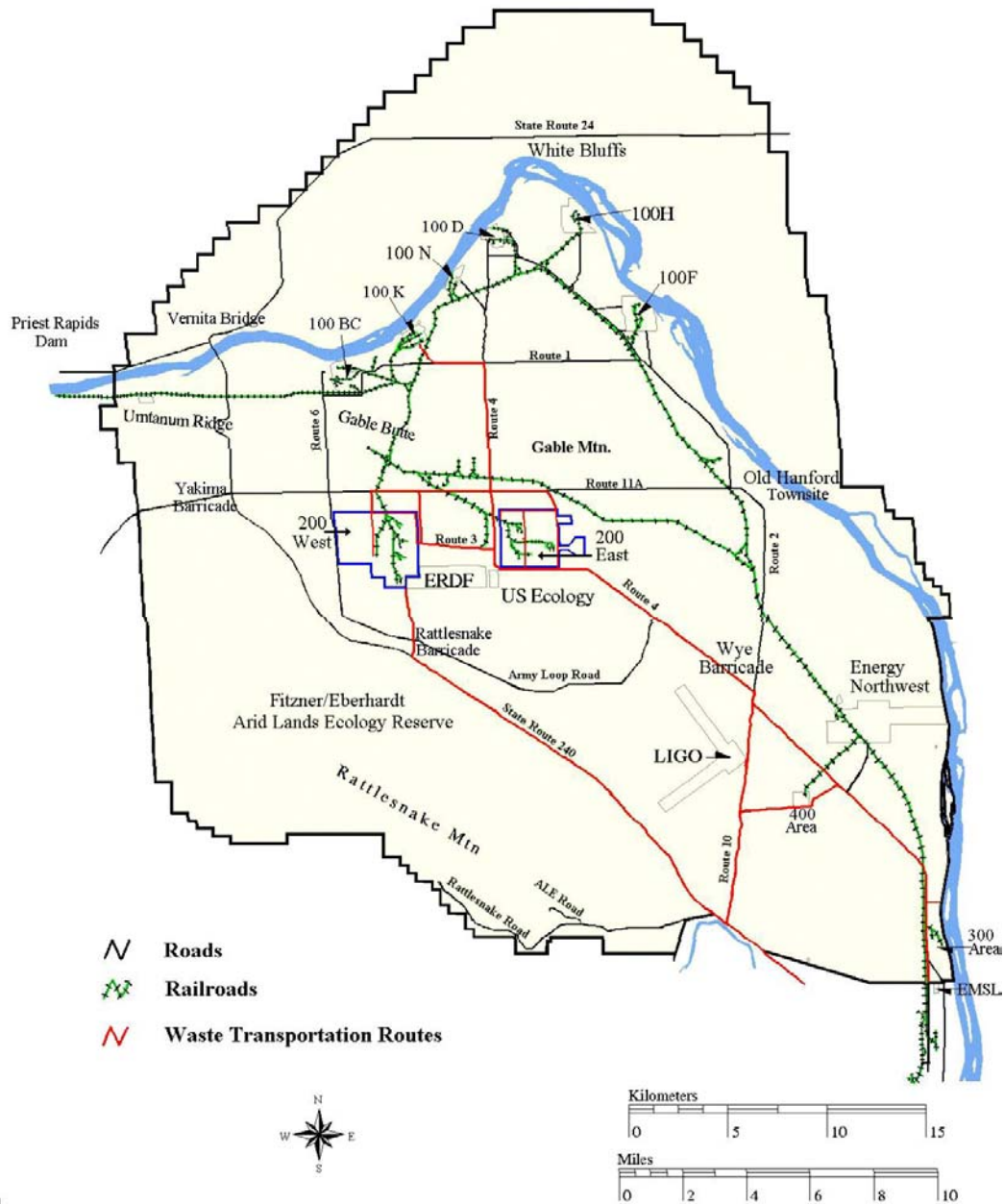
15 The portion of SR 240 most affected by 200 Area commuters is between U.S. 395 and Stevens Drive.  
16 Portions of this roadway currently operate below the minimum level of service established by the  
17 Regional Transportation Planning Organization. Peak annual average daily traffic (AADT) on the section  
18 from Columbia Center Boulevard to I-182 is 54,000 (Perteet et al. 2001).  
19

20 I-182 has peak traffic counts of 35,000 AADT in the vicinity of SR 240. I-182 also has current  
21 deficiencies at the interchanges with Queensgate Drive and 20<sup>th</sup> Avenue. Van Giesen transports most of  
22 the commuters from West Richland and Benton City to SR 240. The intersection of SR 224 and SR 240  
23 is the only section of SR 224 with current level of service (LOS) deficiencies. LOS is a qualitative  
24 measure of the roadway ability to accommodate vehicular traffic, ranging from free-flow conditions  
25 (LOS A) to extreme congestion (LOS F). LOS D is considered the lower end of acceptable LOS  
26 (Perteet et al. 2001).  
27

28 Stevens Drive has peak traffic counts of 8300 AADT at Horn Rapids Road and 22,000 AADT just  
29 north of its intersection with SR 240. Currently this roadway experiences LOS deficiencies. George  
30 Washington Way is the principal north-south arterial through Richland. AADT at the entrance of the  
31 Hanford Site on George Washington Way is 1800. Counts north of McMurray are 18,000 AADT and on  
32 George Washington Way just north of I-182 are 43,000 AADT. George Washington Way has LOS  
33 deficiencies between I-182 and Swift Boulevard (Perteet et al. 2001).  
34

35 Private vehicles account for 91 percent of the person trips to the Hanford Site. The remaining person  
36 trips are by forms of high-occupancy vehicles (mostly Ben-Franklin Vanpools). Of the 91 percent of  
37 private vehicles only 3 percent are by carpool with the remaining 88 percent being single occupancy  
38 vehicles. The Draft Regional Transportation Plan identifies 11,468 employees working at Hanford.  
39 Based on 88 percent of the trips carrying a single person to Hanford, 10,092 single occupancy trips are  
40 made daily or an AADT of 10,184 (Perteet et al. 2001).  
41

42 The Hanford Site rail system originally consisted of approximately 210 km (130 mi) of track. It  
43 connected to the Union Pacific commercial track at the Richland Junction (at Columbia Center in  
44 Kennewick) and to a now-abandoned commercial right-of-way (Chicago, Milwaukee, St. Paul, and



ALE – (Fitzner Eberhardt) Arid Lands Ecology  
 EMSL – Environmental and Molecular Sciences Laboratory  
 ERDF – Environmental Restoration Disposal Facility  
 LIGO – Laser Interferometer Gravitational Wave Observatory  
 mtn. – mountain

M0212-0286-47  
 R1 HSW EIS 03-10-03

**Figure 4.27. Transportation Routes on the Hanford Site**

Pacific railroads) near Vernita Bridge in the northwest section of the site. Prior to 1990, annual railcar movements numbered about 1400 sitewide, transporting materials including coal, fuel, hazardous process chemicals, and radioactive materials and equipment (DOE and Ecology 1996). In October 1998, 26 km (16 mi) of track from Columbia Center to Horn Rapids Road were transferred to the Port of Benton and are currently operated by the Tri-City Railroad. The Port of Benton has been granted the right to operate portions of the railroad on the Hanford Site.

#### **4.8.6 Educational Services**

The majority of primary and secondary education in the Tri-Cities area is served by the Richland, Pasco, Kennewick, and Benton City School Districts. The total 2001 fall enrollment for all districts in Benton and Franklin counties was 40,590 students, an increase of 2.2 percent from the 2000 total of 39,702 students. The 2000 totals include 9622 from the Richland School District, up from 9464 in 2000; 9227 students from the Pasco School District, up from 8850 in 2000; 13,993 students from the Kennewick School District, up from 13,629 in 2000; and 1664 from the Kiona-Benton School District, down from 1673 in 2000 (OSPI 2002).

Several private elementary and secondary schools are located in the Tri-Cities, including Bethlehem Lutheran (K-8) and St. Josephs (K-8) in Kennewick, Christ the King (K-8) and Liberty Christian (K-12) in Richland, Faith Christian (K-12), Country Haven Academy (9-12), St. Patrick's (K-8), Tri-City Junior Academy (K-10), and Tri-Cities Prep Catholic High School in Pasco (9-12). Fall 2001 enrollment at these schools totaled 2350 students, an increase of 1.6 percent from the 2000 total of 2312 (OSPI 2002). Home schooling is prevalent in the Tri-Cities, with students totaling 544. Richland School District reports 205 students are home schooled within their jurisdiction, Pasco School District reports 113, and Kennewick School District has 226 students home schooled (Neitzel 2002b).

Post-secondary education in the Tri-Cities area is provided by Columbia Basin College (CBC), City University, and Washington State University, Tri-Cities branch campus (WSU-TC). The 2001 fall/winter enrollment was approximately 7750 at CBC, 100 at City University, and 1083 at WSU-TC. Many of the programs offered by these three institutions are geared toward the vocational and technical needs of the area. In the 2000-01 academic year, CBC offered 25 Associate in Applied Science (AAS) degree programs. City University offers two associate degree programs, four undergraduate, and three graduate programs, plus access to several more programs through Distance Learning. WSU-TC offers 14 undergraduate and 16 graduate programs, as well as access to graduate programs via satellite (Neitzel 2002a).

#### **4.8.7 Health Care and Human Services**

The Tri-Cities area has three major hospitals and five minor emergency centers, as well as a cancer treatment center. All three hospitals offer general medical services and each includes a 24-hour emergency room, basic surgical services, intensive care, and neonatal care.

The Tri-Cities offers a broad range of social services. State human service offices in the Tri-Cities include the Job Service Center within the Employment Security Department; food stamp offices; the

1 Developmental Disabilities Division; financial and medical assistance; the Child Protective Service;  
2 emergency medical service; a senior companion program; and vocational rehabilitation.

3  
4 The Tri-Cities is also served by a large number of private agencies and voluntary human service  
5 organizations. United Way incorporates 21 participating agencies offering 38 programs. These member  
6 agencies had a cumulative budget total of \$27 million in 2000. In addition, 572 organizations received  
7 funds as part of the United Way Benton-Franklin County donor designation program.

#### 8 **4.8.8 Police and Fire Protection**

9

10 The Benton and Franklin County sheriff departments, local municipal police departments (Pasco,  
11 Kennewick, Richland, West Richland), and the Washington State Patrol Division in Kennewick provide  
12 local police protection.

13  
14 Fire protection in the Tri-Cities area is provided by fire departments in Kennewick, Richland, and  
15 Pasco, a volunteer fire department in West Richland, and three rural fire departments in Benton County.

16  
17 The Hanford Site Fire Department has fire stations onsite, and the Benton County Sheriff Department  
18 provides onsite law enforcement. Site security is provided onsite by the Hanford Patrol.

#### 19 **4.8.9 Utilities**

20

21  
22 The principal sources of water in the Tri-Cities and the Hanford Site are the Columbia River and  
23 groundwater. The water systems of Richland, Pasco, and Kennewick drew a large portion of the  
24 51.5 billion L (13.6 billion gal) used in 2000 from the Columbia River. Each city operates its own supply  
25 and treatment system. The Richland water supply system derives about 82 percent of its water directly  
26 from the Columbia River, while the remainder is split between a well field in North Richland (that is  
27 recharged from the river) and groundwater wells. The city of Richland's total usage in 2001 was  
28 25.2 billion L (6.7 billion gal). The Pasco system also draws from the Columbia River for its water  
29 needs. In 2001, Pasco consumed 11.8 billion L (3.1 billion gal). The Kennewick system uses two wells  
30 and the Columbia River for its supply. These wells serve as the sole source of water between November  
31 and March and can provide approximately 40 percent of the total maximum supply of 30 billion L  
32 (8 billion gal). Total 2001 usage in Kennewick was 13.2 billion L (3.5 billion gal) (Neitzel 2002a).

33  
34 The Benton County Public Utility District, Benton Rural Electric Association, Franklin County Public  
35 Utility District, and City of Richland Energy Services Department provide the Tri-Cities with electricity.  
36 Almost all of the power these utilities provide in the local area is purchased from the Bonneville Power  
37 Administration (BPA) that also provides power to the Hanford Site. Natural gas, provided by the  
38 Cascade Natural Gas Corporation, serves approximately 11,000 customers in the Tri-Cities, as well as the  
39 300 Area of the Hanford Site.

#### 4.8.10 Aesthetic and Scenic Resources

Broad basins and plateaus interspersed with ridges characterize the Hanford Site landscape. The wide vistas composing much of the area are interrupted by numerous large industrial facilities (for example, reactors and processing facilities). However, DOE and its predecessors have disturbed only about 6 percent of the site. The remainder lies undeveloped and includes natural areas and abandoned agricultural lands that remain undisturbed because of restricted public access. The Hanford Reach National Monument was established in part because of these aesthetic and scenic resources.

The Columbia River flows through the northern portion of the Hanford Site before turning south and forming the eastern site boundary. The White Bluffs, steep whitish-brown cliffs adjacent to the Columbia River, comprise a striking natural feature of the landscape. Rattlesnake Mountain, rising to 1092 m (3581 ft) above mean sea level forms the southeastern boundary of the Hanford Site. Gable Mountain and Gable Butte are the highest landforms within the Hanford Site. Large rolling hills are located to the west and north.

SR 240 provides public access through the southwestern portion of the Hanford Site. Views along this highway include the open lands of the Fitzner/Eberhardt Arid Lands Ecology Reserve (ALE) in the foreground to the west, with the prominent peak of Rattlesnake Mountain and the extended ridgelines of the Rattlesnake Hills in the background. To the east, the views include relatively flat terrain with the structures of the 200 East and 200 West Areas visible in the central area with Gable Butte and Gable Mountain in the background. From the highway, the Saddle Mountains can be seen in the distance to the north and steam plumes from the Energy Northwest reactor cooling towers are often visible in the distance to the east. The views along SR 240 are expansive due to the flat terrain and the predominantly short, treeless, vegetation cover.

Hanford Site facilities can also be seen from elevated locations, such as Gable Mountain, Gable Butte, Rattlesnake Mountain, and other parts of the Rattlesnake Hills along the western perimeter. Facilities are visible from the Columbia River as well. Because of the vast expanse, terrain, and distances involved, only portions of the site are visible from any one point.

The acquisition of spiritual guidance and assistance through personal vision quests is deeply rooted in the religious practices of the indigenous people of the Columbia Basin. High spots were selected because they afforded extensive views of the natural landscape and seclusion for quiet meditation. These practices, and the areas where they took place, are critical in maintaining the continuing cultural identity of the Native American community, and, as such, are eligible for inclusion in the National Register. The high points of the Hanford Site, including Gable Mountain, Rattlesnake Mountain, and Wahluke Slope, are representative of locations where vision quests were conducted. The physical landscape visible from each location is a means to determine areas and resources of concern.

#### 4.9 Noise

Noise is technically defined as sound waves that are unwanted and perceived as a nuisance by humans. Sound waves are characterized by frequency, measured in Hertz (Hz), and sound pressure